

## CLAIMS

What is claimed is:

1. A portable communication terminal capable of detecting a position of the  
portable communication terminal by using a Global Positioning System, the  
portable communication terminal comprising:

a register unit which registers data to specify at least one other portable  
communication terminal whose position is to be detected;

a storage unit which stores at least one musical data;

a detector which detects whether or not the other portable communication  
terminal is located within a predetermined range previously set by receiving the  
positional information indicating a position of the other portable communication  
terminal corresponding to the registered data; and

a reproducing unit which reads out the musical data stored in the storage  
unit and reproduces music based on the read musical data when the detector  
detects that the other portable communication terminal is located within the  
predetermined range.

2. The portable communication terminal according to claim 1 further comprising:

a display;

a display controller which displays a map in vicinity of a target position on the display and displays a mark representing the position of the other portable communication terminal so as to be superposed on the map based on the received positional information.

3. The portable communication terminal according to claim 2, wherein the mark is an icon, and the register unit registers the icon therein in correspondence with the other portable communication terminal.

4. The portable communication terminal according to claim 3, wherein the icons registered in the register unit are different each other for every corresponding other portable communication terminal.

5. The portable communication terminal according to claim 1, wherein the portable communication terminal is a portable telephone apparatus, and

the data, registered in the register unit, for specifying the at least one other portable telephone apparatus is a telephone number of the other portable telephone apparatus.

6. The portable communication terminal according to claim 1, wherein  
a plurality of the musical data are stored in the storage unit, and  
the register unit is capable of registering the plurality of the musical data  
which are different each other for every corresponding other portable  
5 communication terminal.

7. The portable communication terminal according to claim 1, wherein the  
predetermined range is set as a distance from a predetermined target position.

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8. A portable telephone apparatus for acquiring positional information of the portable telephone apparatus by using a Global Positioning System, the portable telephone apparatus comprising:

an input unit which inputs various sorts of data which include first data for specifying a specific individual, second data for specifying a portable telephone apparatus owned by the specific individual, target position data, and target distance data for designating a target range by using the target position as a reference;

a first storage unit including a positional information table which stores therein the first data, the second data, the target position data, the target distance data, and present positional information indicative of a present position of the portable telephone apparatus;

a second storage unit which stores therein a distance/ displacement angle table, various sorts of programs, and fixed data, the distance/ displacement angle table including an arc distance with respect to a longitude displacement angle and an arc distance with respect to a latitude displacement angle at each of latitude positions;

a musical piece reproducing unit which reproduces a musical piece; and

a controller which acquires positional information indicative of a present position of the portable telephone apparatus as a communication counter station, updates the present positional information of the positional information table based upon the acquired positional information, and calculates a first distance between the present position of the communication counter station and a target



9. A portable communication terminal capable of detecting a position of the portable communication terminal by using a Global Positioning System, the portable communication terminal comprising:

a input unit which inputs first data for specifying a specific individual and second data for specifying a portable communication terminal owned by the specific individual in correspondence with icon data;

a storage unit which stores the inputted first and second data and positional information of the portable communication terminal owned by the specific individual in correspondence with the icon data;

a display; and

a controller which accesses the portable communication terminal corresponding to the icon data, downloads the positional information of the portable communication terminal corresponding to the icon data, automatically updates the positional information of the portable communication terminal corresponding to the icon data which is stored in the storage unit, and displays an icon based on the icon data so as to be superposed on a map displayed on the display.

10. The portable communication terminal according to claim 9, wherein  
the portable communication terminal is a portable telephone apparatus,  
the second data is a telephone number, and  
when the icon displayed on the display is selected, the controller reads out  
5 the telephone number corresponding to the selected icon data from the storage  
unit and executes a telephone calling process operation based on the read  
telephone number.

11. The portable communication terminal according to claim 9, wherein the  
map displayed on the display is provided based on map information downloaded  
through a based station according to the downloaded positional information of  
the portable communication terminal.

12. The portable communication terminal according to claim 9 further  
comprising:

an azimuth measuring unit for measuring an azimuth of the specific  
individual,

wherein an inclination angle of the icon character on the map is controlled  
based on the measured azimuth.

13. A method of controlling a portable communication terminal which is capable of detecting a position of the portable communication terminal by using a Global Positioning System, the method comprising the steps of:

registering data for specifying at least one other portable communication

terminal whose position is to be detected;

storing at least one musical data;

receiving the positional information indicating a position of the other portable communication terminal corresponding to the registered data;

detecting whether or not the other portable communication terminal is located within a predetermined range previously set based on the received positional information; and

reading out the musical data and reproducing music based on the read musical data when the other portable communication terminal is located within the predetermined range.



14. A method of controlling a portable telephone apparatus for acquiring positional information of the portable telephone apparatus by using a Global Positioning System, the method comprising the steps of:

inputting various sorts of data which include first data for specifying a specific individual, second data for specifying a portable telephone apparatus owned by the specific individual, target position data, and target distance data for designating a target range by using the target position as a reference;

storing, in a positional information table, the first data, the second data, the target position data, and the target distance data;

storing a distance/displacement angle table, various sorts of programs, and fixed data, the distance/displacement angle table including an arc distance with respect to a longitude displacement angle and an arc distance with respect to a latitude displacement angle at each of latitude position;

acquiring positional information indicative of a present position of the portable telephone apparatus as a communication counter station;

storing and updating, in the positional information table, present positional information indicative of a present position of the portable telephone apparatus based upon the acquired positional information;

calculating a first distance between the present position of the communication counter station and a target position from the acquired present positional information, the target position data, and the distance/displacement angle data based upon the arc distance with respect the longitude displacement

angle and the arc distance with respect to the latitude displacement angle at latitude in the vicinity of the target position;

comparing the first distance with a second distance indicated by the target distance data; and

- 5 reproducing a musical piece when the calculated first distance is shorter than, or equal to the second distance.

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15. A method of controlling a portable communication terminal capable of detecting a position of the portable communication terminal by using a Global Positioning System, the method comprising the steps of:

inputting first data for specifying a specific individual and second data for specifying a portable communication terminal owned by the specific individual in correspondence with icon data;

storing the inputted first and second data and positional information of the portable communication terminal owned by the specific individual in correspondence with the icon data;

accessing the portable communication terminal corresponding to the icon data;

downloading the positional information of the portable communication terminal corresponding to the icon data;

automatically updating the positional information of the portable communication terminal corresponding to the stored icon data; and

displaying an icon based on the icon data so as to be superposed on a map displayed on a display.

16. A computer program product including instructions, wherein the instruction, when executed by a computer provided in a portable communication terminal capable of detecting a position of the portable communication terminal by using a Global Positioning System, cause the portable communication terminal to

5 perform the steps of:

registering data for specifying at least one other portable communication terminal whose position is to be detected;

storing at least one musical data;

receiving the positional information indicating a position of the other portable communication terminal corresponding to the registered data;

detecting whether or not the other portable communication terminal is located within a predetermined range previously set based on the received positional information; and

reading out the musical data and reproducing music based on the read musical data when the other portable communication terminal is located within the predetermined range.

17. A computer program product including instructions, wherein the instruction, when executed by a computer provided in a portable telephone apparatus for acquiring positional information of the portable telephone apparatus by using a Global Positioning System, cause the portable telephone apparatus to perform  
5 the steps of:

inputting various sorts of data which include first data for specifying a specific individual, second data for specifying a portable telephone apparatus owned by the specific individual, target position data, and target distance data for designating a target range by using the target position as a reference;

storing, in a positional information table, the first data, the second data, the target position data, and the target distance data;

storing a distance/displacement angle table, various sorts of programs, and fixed data, the distance/displacement angle table including an arc distance with respect to a longitude displacement angle and an arc distance with respect to a latitude displacement angle at each of latitude position;

acquiring positional information indicative of a present position of the portable telephone apparatus as a communication counter station;

storing and updating, in the positional information table, present positional information indicative of a present position of the portable telephone apparatus  
20 based upon the acquired positional information;

calculating a first distance between the present position of the communication counter station and a target position from the acquired present positional information, the target position data, and the distance/displacement

angle data based upon the arc distance with respect the longitude displacement angle and the arc distance with respect to the latitude displacement angle at latitude in the vicinity of the target position;

comparing the first distance with a second distance indicated by the target

5 distance data; and

reproducing a musical piece when the calculated first distance is shorter than, or equal to the second distance.

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| 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2413 | 2414 | 2415 | 2416 | 2417 | 2418 | 2419 | 2420 | 2421 | 2422 | 2423 | 2424 | 2425 | 2426 | 2427 | 2428 | 2429 | 2430 | 2431 | 2432 | 2433 | 2434 | 2435 | 2436 | 2437 | 2438 | 2439 | 2440 | 2441 | 2442 | 2443 | 2444 | 2445 | 2446 | 2447 | 2448 | 2449 | 2450 | 2451 | 2452 | 2453 | 2454 | 2455 | 2456 | 2457 | 2458 | 2459 | 2460 | 2461 | 2462 | 2463 | 2464 |
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18. A computer program product including instructions, wherein the instruction, when executed by a computer provided in a portable communication terminal capable of detecting a position of the portable communication terminal by using a Global Positioning System, cause the portable communication terminal to perform the steps of:

inputting first data for specifying a specific individual and second data for specifying a portable communication terminal owned by the specific individual in correspondence with icon data;

storing the inputted first and second data and positional information of the portable communication terminal owned by the specific individual in correspondence with the icon data;

accessing the portable communication terminal corresponding to the icon data;

downloading the positional information of the portable communication terminal corresponding to the icon data;

automatically updating the positional information of the portable communication terminal corresponding to the stored icon data; and

displaying an icon based on the icon data so as to be superposed on a map displayed on a display.